

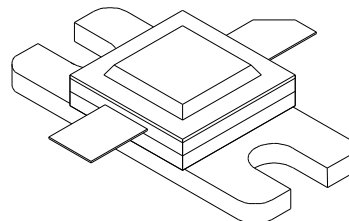
MDS150

150 Watts, 50 Volts, Pulsed
 Avionics 1030 - 1090 MHz

GENERAL DESCRIPTION

The MDS150 is a high power COMMON BASE bipolar transistor. It is designed for MODE-S systems in the 1030 - 1090 MHz frequency band. The transistor includes double input prematch and output prematch for broadband performance. The device has gold thin-film metallization and diffused ballasting in a hermetically sealed package for proven highest MTTF.

CASE OUTLINE 55AW Style 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @25°C¹ 350 W

Maximum Voltage and Current

Collector to Emitter Voltage (BV_{ces}) 55 V

Emitter to Base Voltage (BV_{ebo}) 3.5 V

Peak Collector Current (I_c) 10 A

Maximum Temperatures

Storage Temperature -65 to +150 °C

Operating Junction Temperature +200 °C

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	F = 1030, 1090 MHz	150			W
P _{in}	Power Input	V _{cc} = 50 Volts			20	W
P _g	Power Gain	PW = Note 2	8.75			dB
η _c	Collector Efficiency	DF = Note 2	40			%
VSWR	Load Mismatch Tolerance				3:1	
Pd ¹	Pulse Droop				0.5	dB
Trise ¹	Rise Time				100	nSec

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 10 mA	3.5			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 30 mA	55			V
BV _{cbo}	Collector to Base Breakdown	I _c = 30 mA	55			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 1 A	10			
θ _{jc} ¹	Thermal Resistance				0.5	°C/W

NOTE 1: AT RATED OUTPUT POWER AND PULSE CONDITIONS

NOTE 2: Burst: 0.5uS ON, 0.5uS OFF x 128, repeated every 6.4mS

REV B: MAY 2010

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